THAT WHICH IS CLAIMED:

1. A process for bonding a nonwoven web comprising:

forming a nonwoven web of thermoplastic fibers or filaments containing a polymer which melts below 140°C;

contacting the nonwoven web with a patterned embossing roll having an outer surface including a multiplicity of individual raised calender lands which are spaced apart from one another by intervening depressions, wherein at least said depressions are covered by a surface coating of a fluoropolymer; and

transferring energy to the nonwoven web to cause the fibers or filaments thereof to fuse and form point bond sites in discrete areas where the web is contacted by the raised calender lands.

2. A process according to claim 1, wherein the raised calender lands form from 4 to 40 percent of the surface area of the embossing roll.

3. A process according to claim 2, wherein the raised calender lands are present at a concentration of 40 to 500 lands per square inch.

4. A process according to claim 1, wherein the outer exposed surface of the embossing roll has a Rockwell C hardness of 35 or greater.

5. A process according to claim 1, wherein the step of contacting the nonwoven web with a patterned embossing roll comprises directing the nonwoven web through a calender nip formed between a smooth, hard-surfaced anvil roll and the patterned embossing roll.

6. A process according to claim 5, wherein the fluoropolymer surface coating is continuous over the surface of the patterned embossing roll and covers the raised lands and the intervening depressions.

7. A process according to claim 1, wherein the step of forming fibers or filaments into a nonwoven web comprises forming the fibers or filaments from at least two different polymers arranged as distinct phases in the cross-section of the fiber.

8. A process according to claim 7, wherein the fibers or filaments are formed as sheath-core structured bicomponent fibers or filaments having a sheath of a polymer which melts below 140°C and a core of a polymer which melts at a higher temperature.

9. A process according to claim 7, wherein the fibers are formed from a highly dispersed blend of at least two different immiscible thermoplastic polymers which form a dominant continuous polymer phase of one melting point polymer in which is dispersed a discontinuous phase of a different melting point polymer.

10. A process for bonding a nonwoven web comprising:

forming a nonwoven web of thermoplastic fibers or filaments containing a polymer which melts below 140°C;

contacting the nonwoven web with a patterned embossing roll having an outer surface including a multiplicity of individual raised calender lands which are spaced apart from one another by intervening depressions, the raised calender lands being present at a concentration of 40 to 500 lands per square inch and forming from 4 to 40 percent of the surface area of the embossing roll, and the roll having a hard tie coating adhered to the surface of said roll and overlying at least said depressions, and a fluoropolymer surface coating adhered to said tie coating; and

transferring energy to the nonwoven web to cause the fibers or filaments thereof to fuse and form point bond sites in discrete areas where the web is contacted by the raised calender lands.

11. A process according to claim 10, wherein said hard tie coating and said fluoropolymer surface coating overlie both said lands and said depressions, and the outer exposed surface of the embossing roll has a Rockwell C hardness of 35 or greater

12. A process according to claim 10, wherein said tie coating and said fluoropolymer surface coating each have a thickness of no more than about 5 mils.

13. A process for bonding a nonwoven web comprising:

forming a nonwoven web of thermoplastic fibers or filaments containing a polymer which melts below 140°C;

forming a calender nip between a smooth, hard-surfaced anvil roll and a cooperating patterned embossing roll, the patterned embossing roll including a metallic cylindrical roll core having an outer surface with a multiplicity of raised calender lands which are spaced apart from one another by intervening depressions, the raised calender lands being present at a concentration of 40 to 500 lands per square inch and forming from 4 to 40 percent of the surface area of the embossing roll, and the roll having a hard tie coating adhered to the surface of said roll core and overlying at least said depressions, and a fluoropolymer surface coating adhered to said tie coating;

rotating the anvil roll and the embossing roll in opposite directions;

maintaining the calender nip at a temperature of from 90 to 160 degrees C and at a pressure of 50 to 1500 pounds per linear inch; and

directing the nonwoven web through the calender nip and thermally bonding the thermoplastic fibers or filaments thereof in discrete areas corresponding to the raised calender lands.

14. A process according to claim 13, wherein said tie coating and said fluoropolymer surface coating each have a thickness of no more than about 5 mils.

15. A process according to claim 13, wherein the step of forming a nonwoven web comprises forming the fibers from at least two different polymers arranged as distinct phases in the cross-section of the fiber.

16. A process according to claim 15, wherein the fibers are formed as sheath-core structured bicomponent fibers having a sheath of said polymer which melts below 135°C and a core of a higher melting point polymer.

17. A process according to claim 15, wherein the thermoplastic fibers comprise sheath-core structured bicomponent fibers having a polypropylene core and a polyethylene sheath.

18. A process according to claim 15, wherein the fibers are formed from a highly dispersed blend of at least two different immiscible thermoplastic polymers and have a dominant continuous polymer phase of a higher melting point polymer in which is

dispersed a discontinuous phase of said polymer which melts below 135°C, and wherein said lower melting point discontinuous phase occupies a portion of the surfaces of the fibers.

19. A process for bonding a nonwoven web comprising:

forming a nonwoven web of sheath-core structured bicomponent fibers or filaments having a polypropylene core and a polyethylene sheath;

forming a calender nip between a smooth, hard-surfaced anvil roll and a cooperating patterned embossing roll, the patterned embossing roll having an outer surface including a multiplicity of raised calender lands which are spaced apart from one another by intervening depressions, wherein at least said depressions are covered by a surface coating of a fluoropolymer;

rotating the anvil roll and the embossing roll in opposite directions;

maintaining the calender nip at a temperature of at least 90 degrees C and at a pressure of 50 to 1500 pounds per linear inch; and

directing the nonwoven web through the calender nip and thermally bonding the thermoplastic fibers or filaments thereof in discrete areas corresponding to the raised calender lands.

20. A process according to claim 19 wherein said step of forming a calender nip comprises forming the calender nip between said smooth, hard-surfaced anvil roll and a cooperating patterned embossing roll which includes a metallic cylindrical roll core having an outer surface with a multiplicity of raised calender lands and intervening depressions, a hard tie coating adhered to the surface of said roll core and overlying said lands and said depressions, and a fluoropolymer surface coating adhered to said tie coating and covering both said lands and said depressions.

21. An apparatus for producing a thermally bonded nonwoven web comprising:

means for forming a nonwoven web of thermoplastic fibers or filaments containing a polymer which melts below 135°C;

a patterned embossing roll mounted for contacting the nonwoven web, said patterned embossing roll having an outer surface including a multiplicity of individual raised calender lands which are spaced apart from one another by intervening depressions, wherein at least said depressions are covered by a surface coating of a fluoropolymer; and

means cooperating with said roll for transferring energy to the nonwoven web to cause the fibers or filaments thereof to fuse and form point bond sites in discrete areas where the web is contacted by the raised calender lands.

22. Apparatus according to claim 21, wherein said means for transferring energy comprises means for internally heating said roll.

23. Apparatus according to claim 21, wherein said means for transferring energy comprises an ultrasonic horn cooperating with said patterned embossing roll.

24. Apparatus according to claim 21, wherein the raised calender lands form from 4 to 40 percent of the surface area of the embossing roll.

25. Apparatus according to claim 24, wherein the raised calender lands are present at a concentration of 40 to 500 lands per square inch.

26. Apparatus according to claim 21, wherein the outer exposed surface of the embossing roll has a Rockwell C hardness of 35 or greater.

27. An apparatus for producing a thermally bonded nonwoven web comprising:

means for forming a nonwoven web of thermoplastic fibers or filaments containing a polymer which melts below 135°C;

a patterned embossing roll mounted for contacting the nonwoven web, said patterned embossing roll having an outer surface including a multiplicity of individual raised calender lands which are spaced apart from one another by intervening depressions, the raised calender lands being present at a concentration of 40 to 500 lands per square inch and forming from 4 to 40 percent of the surface area of the embossing

roll, and the roll having a hard tie coating adhered to the surface of said roll core and overlying at least said depressions, and a fluoropolymer surface coating adhered to said tie coating; and

means for transferring energy to the nonwoven web to cause the fibers or filaments thereof to fuse and form point bond sites in discrete areas where the web is contacted by the raised calender lands.

28. Apparatus according to claim 27 additionally including a smooth, hard-surfaced anvil roll cooperating with said a patterned embossing roll to form a calender nip, and wherein the fluoropolymer surface coating is continuous over the surface of the roll and covers the raised lands and the intervening depressions.

29. Apparatus according to claim 27, wherein said tie coating and said fluoropolymer surface coating each have a thickness of no more than about 5 mils.

30. Apparatus according to claim 27, wherein the outer exposed surface of the patterned embossing roll has a Rockwell C hardness of 35 or greater.

31. Apparatus according to claim 27, wherein the means for forming a nonwoven web includes means for forming the fibers from at least two different polymers arranged as distinct phases in the cross-section of the fiber.

32. Apparatus according to claim 27, wherein the surface coating of fluoropolymer is selected from the group consisting of polytetrafluoroethylene hexafluoropropylene, monochlorotrifluoroethylene, or tetrafluoroethylene-hexafluoropropylene copolymer and the outer surface of the roll has a Rockwell C hardness of at least 35.

33. An apparatus for producing a thermally bonded nonwoven web comprising:

means for forming a nonwoven web of thermoplastic fibers or filaments containing a polymer which melts below 135°C;

a smooth, hard-surfaced anvil roll and a cooperating patterned embossing roll forming a calender nip, the patterned embossing roll including a metallic cylindrical roll

core having an outer surface with a multiplicity of raised calender lands which are spaced apart from one another by intervening depressions, the raised calender lands being present at a concentration of 40 to 500 lands per square inch and forming from 4 to 40 percent of the surface area of the embossing roll, and the roll having a hard tie coating adhered to the surface of said roll core and overlying at least said depressions, and a fluoropolymer surface coating adhered to said tie coat;

means for rotating the anvil roll and the embossing roll in opposite directions;

means for maintaining the calender nip at a temperature of from 90 to 250 degrees C and at a pressure of 50 to 1500 pounds per linear inch; and

means for directing the nonwoven web through the calender nip and thermally bonding the thermoplastic fibers or filaments thereof in discrete areas corresponding to the raised calender lands.

34. Apparatus according to claim 33, wherein said tie coating and said fluoropolymer each have a thickness of no more than about 5 mils.

35. Apparatus according to claim 34, wherein said hard tie coating and said fluoropolymer surface coating overlie both said lands and said depressions.

36. Apparatus according to claim33, wherein said tie coating is a composition selected from the group consisting of ceramic compositions, carbides, molybdenum, nickel-chromium, stainless steel, and nickel.